

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE
INTERNATIONAL PRELIMINARY
EXAMINING AUTHORITY

(PCT Rule 66)

Date of mailing
(day/month/year)

05.01.2011

Applicant's or agent's file reference
P43568.WO/HENDRYN

REPLY DUE within 2 month(s)
from the above date of mailing

International application No.
PCT/GB2009/051347

International filing date (day/month/year)
08.10.2009

Priority date (day/month/year)
08.10.2008

International Patent Classification (IPC) or both national classification and IPC
INV. B01D17/04

Applicant
Pursuit Dynamics PLC.

1. ☒ The written opinion established by the International Searching Authority:
☐ is ☒ is not
considered to be a written opinion of the International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
 - ☒ Box No. I Basis of the opinion
 - ☐ Box No. II Priority
 - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Box No. IV Lack of unity of invention
 - ☒ Box No. V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Box No. VI Certain documents cited
 - ☐ Box No. VII Certain defects in the international application
 - ☐ Box No. VIII Certain observations on the international application
3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(e).
How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.
Also: For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 *bis*. For an informal communication with the examiner, see Rule 66.6. For an additional opportunity to submit amendments, see Rule 66.4.
If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary report on patentability (Chapter II of the PCT) must be established according to Rule 69.2 is: 08.02.2011

Name and mailing address of the international preliminary examining authority:



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**WRITTEN OPINION OF THE INTERNATIONAL
PRELIMINARY EXAMINING AUTHORITY**

International application No.
PCT/GB2009/051347

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
- ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into ,
which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3(a) and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4(a))
 - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))
2. With regard to the elements of the international application, this opinion has been established on the basis of
(*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, Pages

1-27 as originally filed

Claims, Numbers

1-10 filed with the letter of 09-08-2010

Drawings, Sheets

1/3-3/3 as originally filed

- ☐ a sequence listing - see Supplemental Box Relating to Sequence Listing.
3. ☒ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☒ the claims, Nos. 1-13
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
4. ☐ This opinion has been established as if (some of) the amendments listed below had not been made, since either they are considered to go beyond the disclosure as filed, or they were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in the Supplemental Box (Rules 70.2(c) and (c-bis)):
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
5. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 66.1(d-bis)).
6. ☐ Supplementary international search report(s) from Authority(ies) have been received and taken into account in drawing up this opinion (Rule 45bis.8(b) and (c)).

Box No. V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>4, 6-10</u>
Inventive step (IS)	Claims	
Industrial applicability (IA)	Claims	<u>1-10</u>

2. Citations and explanations:

see separate sheet

Re Item V.

1. Reference is made to the following documents:

D1 : EP 1 549 856 A (PURSUIT DYNAMICS PLC [GB]) 6 July 2005 (2005-07-06)

D2 : US 2007/210186 A1 (FENTON MARCUS B M [GB] ET AL) 13 September 2007 (2007-09-13)

D3 : WO 2008/062218 A (PURSUIT DYNAMICS PLC [GB]; FENTON MARCUS BRIAN MAYHALL [GB]; DAWSON ST) 29 May 2008 (2008-05-29)

D4: US-A-5 738 762 (OHSOL ERNEST O [US]) 14 April 1998 (1998-04-14) cited in the application

D6: US2083801 (EDDY HAROLD C [US]) 6 September 1932 (1932-09-06) newly introduced document

2. INDEPENDENT (AMENDED) CLAIM 1

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

The document D6 discloses (figure 3, claim 2, page 1 left column line 31-36, page 1 right column line 43-53, page 3 left column line 52 - page 3 right column line 21):

A method of demulsifying an emulsion, the method comprising the steps of:

supplying the emulsion (via pipe 58) to a fluid processor passage having an inlet (at branch of manifold chamber 67) and an outlet (end of 63), wherein the cross sectional area of the passage between the inlet and outlet does not reduce below the cross sectional area at the inlet (outlet 63 is wider than inlet at branch of manifold chamber 67);

supplying a transport fluid (gas via annular space 56) from a transport fluid source to a transport fluid nozzle (gas passage 65) which circumscribes the passage and opens into the passage intermediate said inlet and said outlet;

accelerating the transport fluid through a throat of the transport nozzle, the throat having a cross sectional area which is less than that of a nozzle inlet (the annular gas passage is reduced from the gas manifold chamber 60 into the gas discharge space 65);

injecting the transport fluid from the nozzle outlet (end 65) into the emulsion in the passage such that the emulsion is atomised and a vapour-droplet regime is formed comprising a dispersed phase of emulsion droplets within a continuous vapour phase;

vaporising at least some of the emulsion droplets within the vapour-droplet regime; and

condensing the vapour back to the liquid phase.

Hence, the subject-matter of (amended) claim 1 is not novel (Article 33(1,2) PCT).

Note: Due to the high gas speed in the annular restriction (65) followed by the enlargement at the end of nozzle 64 cavitation and atomisation of the emulsion will occur whereby some emulsion droplets will be vaporising and condensing thereafter.

(The atomised emulsion is additionally exposed to an electrical field which further enhances demulsification of the emulsion).

3.DEPENDENT CLAIMS

Dependent claims 2-10 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, the reasons being as follows:

- claim 2: D6 (page 3 left column line 40-47) discloses a settling tank 46 separating the condensed constituents.
- claim 3: The gas stream in D6 having a high velocity implies that it is released from a source as a compressed gas.
- claim 5: D6 (claim 2) specifies the emulsion to be an emulsion of oil and water.
- claims 4,6-10: The features of these claims pertain to merely one of several straightforward possibilities (steam, agent, diluent and location of their introduction) from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to achieve the known effects of said features.